

REMARKS

The Examiner's attention to the present application is noted with appreciation. Applicant has amended the specification, drawings, and claims to overcome the Examiner's objections and 35 U.S.C. 112 rejections. Applicant thanks the Examiner for the opportunity to so clarify the subject matter of the present invention.

Examiner rejects claims 1, 6, 7, 9, 10 under 35 U.S.C. 102(b) as being anticipated by Hojyo. Examiner further rejected the remainder of the claims under 35 U.S.C. 103(a) as being unpatentable over Hojyo in view of other cited references. Such rejections are respectfully traversed, especially as to the claims as amended. Hojyo states in numerous places that rotation of the cell is slow. For example, in column 3, lines 11-14, Hojyo discloses that "the tanks...simultaneously rotate individually slowly centering around their axis at their moving position on the orbit". Further, this rotation must be "sufficiently slow so as not to impede the centrifugal force generated by its revolution..." (column 1, lines 39-41). Thus Hojyo actually teaches against the present invention, which requires that "the plating cell is rotated at sufficiently high rpm to centrifugally cast the substrate material against the cathode contact..." (page 9, lines 31-32). The revolution of the present plating cell around a second axis is thus *slower* than the rotation of said cell, which is exactly opposite the motion disclosed in Hojyo.

The relative motion of Hojyo is sufficient to plate macroscopic objects, such as 1mm to 10mm diameter screws (column 3, lines 23-24). This is partly because Hojyo is not a flow through device, unlike the present invention. Therefore Hojyo does not have to overcome the hydrodynamic shear force of the electrolyte flowing through the cell. Even if Hojyo were a flow through cell, macroscopic objects do not require particularly large centrifugal forces to pin them to the plating cell wall. In contrast, a primary object of the present invention is to uniformly plate ultra-fine submicron or nanometer powders. Such powders would not be uniformly platable using the apparatus disclosed in Hojyo because it cannot generate enough centrifugal force to adhere powder particles to the plating cell wall. This is due to both the need to overcome hydrodynamic shear forces, which are far more predominating for small powders, and due to the necessity for making sure all powder is out of solution and uniformly coating the plating cell wall. These requirements cannot be fulfilled by an apparatus which utilizes the relatively slow rotation disclosed in Hojyo, since in that case the centrifugal force is generated by revolution of the plating cell around a second axis, which would not be sufficient to force the small powders *uniformly* against the inside of the cell. Thus, Hojyo, teaches against the present application, and there is no motivation to combine it with other references.

If any issues remain, or if the Examiner believes that prosecution of this application might be expedited by discussion of the issues, the Examiner is cordially invited to telephone the undersigned attorney for Applicant at the telephone number listed below.

Being filed herewith is a Petition for Extension of Time to June 14, 2004, which is the first business day after June 11, 2004, with the appropriate fee. Authorization is given to charge payment of any additional fees required, or credit any overpayment, to Deposit Acct. 13-4213. A duplicate of the Petition paper is enclosed for accounting purposes.

Respectfully submitted,

By:



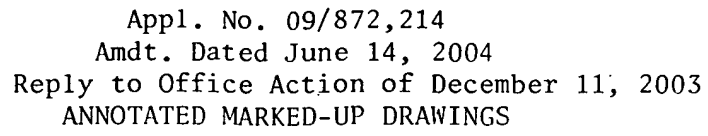
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Appl. No. 09/872,214
Amdt. Dated June 14, 2004
Reply to Office Action of December 11, 2003
ANNOTATED MARKED-UP DRAWINGS

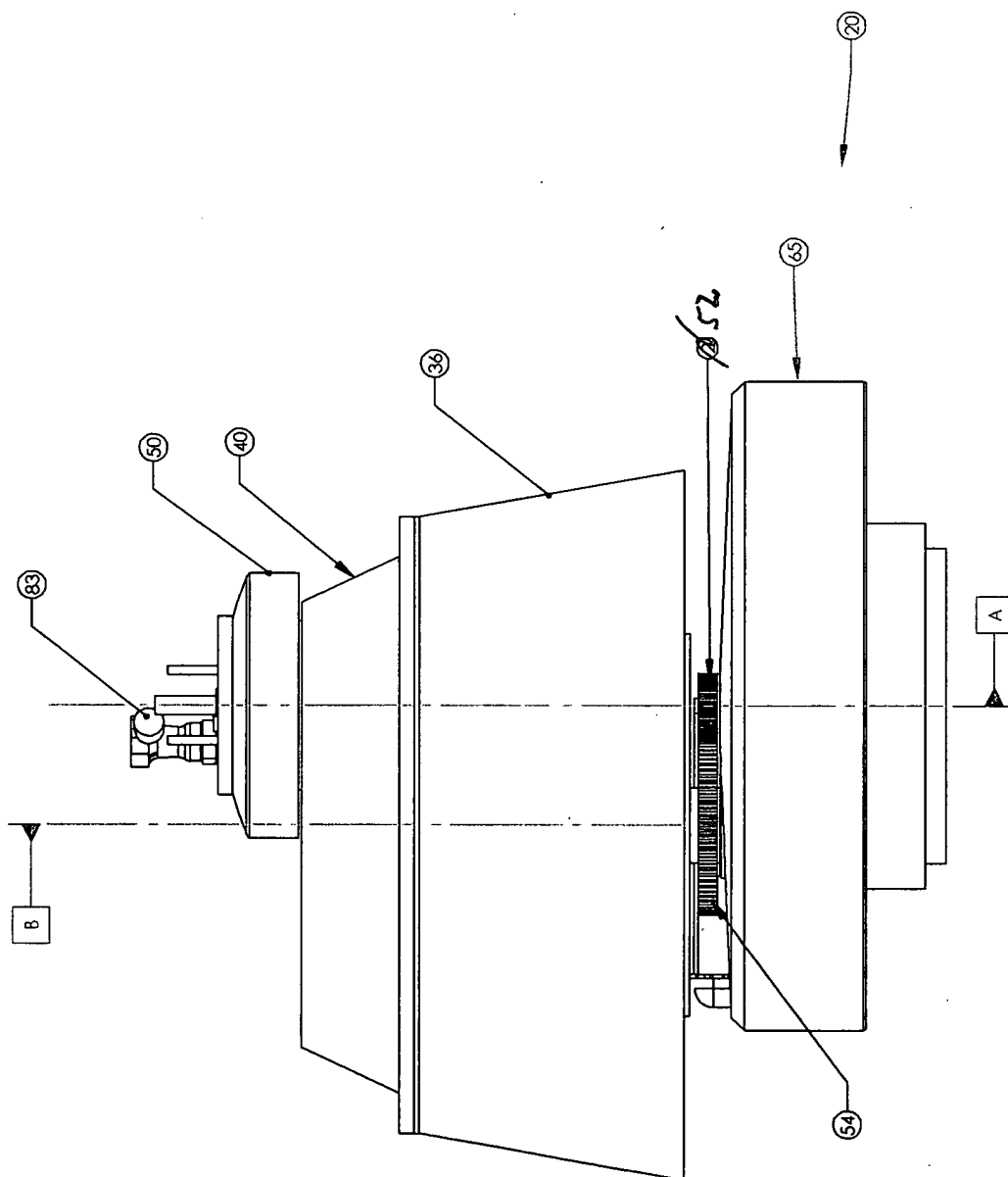


FIG. 12